



REMARKS

Claims 1 – 31 are pending in the present application. Claims 1 – 6, 9 – 12, 14, 21 and 23 – 31 are rejected in the present Office Action. Claims 7, 8, 13 and 22 are objected to in the present Office Action. In the Office Action the Examiner noted that, due to the cancellation of claim 2, the claims were being renumbered. Applicants have amended the claims to indicate the proper numbering by renumbering claims 3 – 32 as claims 2 – 31. Further, where necessary the dependencies of the claims have also been corrected.

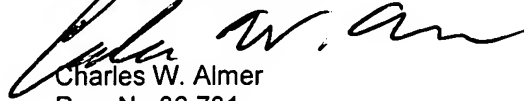
In the present Office Action the Examiner indicated that claims 7, 8, 13 and 22 would be patentable if rewritten in independent form to include the limitations of the base claim and any intervening claims. Applicants are grateful for this indication.

Claims 1 – 6, 9 – 12, 14 – 21 and 23 – 31 were rejected as unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 6,265,776, issued to Gilleo in view of DD318377. Gilleo discloses a flip chip with an integrated underfill and a separate flux coating. The abstracts of DD318377 disclose a catalyst for crosslinking epoxy resins without the release of gaseous products. Although Gilleo teaches an underfill coating, it fails to teach a B-staged coating that includes flux in the underfill system. Gilleo first applies the flux system onto the solder bumps, and later separately applies the underfill system in the space between each solder bumps. Hence, two distinctively different layers are utilized, i.e., 1) a flux system that includes epoxy-anhydride; and 2) an underfill system without flux material. Gilleo explicitly excludes the flux from the underfill system. In contrast to Gilleo, the present application teaches a B-stageable material that includes the flux in the underfill material to eliminate undesired effects such as tackiness and gumming of the wafer saw during the dicing process. The abstracts of DD218377 disclose an imidazole-anhydride composition that does not generate CO₂ during curing conditions. As opposed to DD218377, the Applicant utilizes an imidazole-anhydride adduct as a latent catalyst because it does not interfere with the interconnection formation, thus allowing fluxing and curing in one reflow step. There is no motivation, teaching, suggestion or disclosure that would lead one skilled in the art to combine Gilleo and DD218377, which provides the feature of reduction of bubbles, in order to provide for an underfill with a separate flux coating such as that of Gilleo.

The Applicant further maintains that even if one skilled in the art were to combine Gilleo and DD218377, the result would be distinctly different than the current invention. The result would be an underfill that would produce no bubbles and have a separate flux coating. This would be substantially different than the B-stageable underfill containing a flux of the present invention. Accordingly, it is respectfully submitted that claims 1 – 6, 9 – 12, 14 – 21 and 23 – 31 are patentable under 35 U.S.C. 103(a) over Gilleo in view of DD318377.

In view of the foregoing, it is respectfully submitted that the present application is in condition for allowance. If there are any issues that the Examiner wishes to discuss, he is invited to contact the undersigned attorney at the telephone number set forth below.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Charles W. Almer".

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